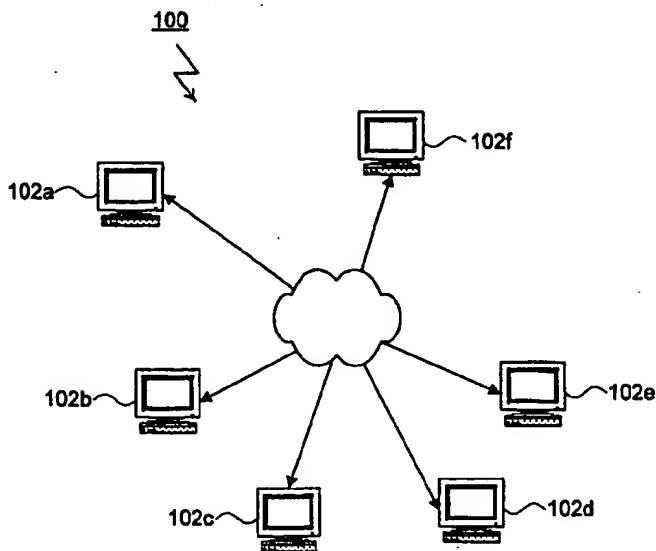




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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>7</sup> :	A1	(11) International Publication Number: WO 00/51051
G06F 17/60		(43) International Publication Date: 31 August 2000 (31.08.00)
(21) International Application Number:	PCT/US00/04905	(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
(22) International Filing Date:	25 February 2000 (25.02.00)	
(30) Priority Data:	60/121,776 26 February 1999 (26.02.99) US	
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(54) Title:	AN INTEGRATED ELECTRONIC CROSS-VENDOR SMART-BUYING CLEARINGHOUSE	
(57) Abstract	<p>An integrated electronic cross-vendor smart-buying clearinghouse is provided. Consumers register or join the clearinghouse. Once registered, the clearinghouse functions as intermediary between the user's web browser and the Internet. As part of the registration process, a personal agent is downloaded to the consumer's computer (102a-102f). The personal agent monitors inbound and outbound communications between the user's web browser and the Internet. By monitoring these communications, the personal agent is able to make inferences that describe the user's purchasing preferences. The clearinghouse combines the information gathered by the personal agent with information obtained from a range of sources describing products, services, vendors and manufacturers. The clearinghouse uses the combined information to assist the user in selecting preferred products and services.</p>	
6/11/05, EAST Version: 2.0.1.4		



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## An Integrated Electronic Cross-Vendor Smart-Buying Clearinghouse

### FIELD OF THE INVENTION

- The present invention is generally related to systems for electronic commerce.
- 5 More specifically, the present invention provides a clearinghouse that allows Internet users to purchase products in a way that automatically reflects the users' individual criteria.

### BACKGROUND OF THE INVENTION

- 10 Choosing a product can be a difficult and time-consuming task. This is attributable, in part, to the large number of criteria that can be involved in purchase decisions. These criteria typically include factors such as price, product features, quality and brand name. Other factors, more esoteric factors can also play a role. Some consumers, for example, prefer to patronize manufacturers who have good
- 15 environmental practices (green companies). Consumers may also prefer patronizing manufacturers who have good labor practices. Many other social concerns may also play a role in the decisions made by consumers.

Gathering reliable information for all of the criteria involved in a purchase takes time. This is true because the gathering process is largely manual, even where

20 purchasing is done online. Thus, consumers find that they must manually seek out sources of information such as product and company reviews. Within these sources, consumers must locate the information that relates to the criteria with which they are concerned. They must then combine that information with information from manufacturer or vendor websites to make a final purchase decision.

- 25 The difficulty associated with this decision process is exacerbated by the need to repeat the process (in whole or in part) for each different purchase. After all, different purchases may involve different manufactures, different criteria, or both. The difficulty associated with the decision process is also compounded by the multitude of vendors and manufactures that sell competitive products. In many
- 30 cases, this forces the consumer to investigate a multitude of websites before making a decision.

For these and other reasons, it follows that there is a need for systems that simplify the consumer decision making process. These systems are particularly needed where consumers have a wide range of choices or where consumers are inclined to consider a great number of criteria as part of the decision making  
5 process.

## SUMMARY OF THE INVENTION

An embodiment of the present invention includes an integrated electronic cross-vendor smart-buying clearinghouse. Each consumer who belongs to the  
10 clearinghouse uses the clearinghouse to access the Internet and World Wide Web. The personal agent works as an intermediary, or proxy, between the user's web browser and the Internet.

During their initial use, the clearinghouse issues a personal agent to each user. Each user's personal agent is a program, application or applet that executes on  
15 their computer. The personal agent monitors inbound and outbound communications between the user's web browser and the Internet. By monitoring these communications, the personal agent is able to make inferences about the user. The inferences describe the user's purchasing preferences. In some cases, these preferences are explicit, as in the case where a user has previously purchased the  
20 same or a similar product. In other cases, the preferences may be implicit and the user may not even be aware of them. The personal agent also allows users to explicitly designate their own preferences by online form or otherwise.

The clearinghouse is configured to continually gather information on vendors, products and services. The source and type of information gathered depends on the  
25 particular embodiment. In most cases, however, this information will include third-party product information from a range of different sources.

The clearinghouse uses the inferences gathered from the user in combination with the information gathered by other sources to guide the user's choices. The clearinghouse can do this using a range of different mechanism including  
30 highlighting preferred selections or eliminating undesired selections.

In this way, the present invention provides a user-centric forum that allows consumers to shop for and select products and services. The forum is tailored for each user and assists the user in making complex purchasing decisions.

Advantages of the invention will be set forth, in part, in the description that 5 follows and, in part, will be understood by those skilled in the art from the description herein. The advantages of the invention will be realized and attained by means of the elements and combinations particularly pointed out in the appended claims and equivalents.

## 10 BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate several embodiments of the invention and, together with the description, serve to explain the principles of the invention.

Figure 1 is a block diagram of a computer network shown as an exemplary 15 environment for an embodiment of the present invention.

Figure 2 is a block diagram of a computer as used in the network of Figure 1.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Reference will now be made in detail to preferred embodiments of the 20 invention, examples of which are illustrated in the accompanying drawings. Wherever convenient, the same reference numbers will be used throughout the drawings to refer to the same or like parts.

In Figure 1, a computer network 100 is shown as a representative environment for an embodiment of the present invention. Computer network 100 is 25 intended to be representative of the complete spectrum of computer network types including Internet and internet-like networks. Computer network 100 includes a number of computers, of which computers 102a through 102f are representative. Computers 102 are intended to be representative of the wide range of large and small computer systems that are used in computer networks of all types.

30 Figure 2 shows a representative implementation for computers 102. Structurally, each computer 102 includes a processor, or processors 202, and a memory 204. Processor 202 can be selected from a wide range of commercially

available or custom types. An input device 206 and an output device 208 are connected to processor 202 and memory 204. Input device 206 and output device 208 represent all types of I/O devices such as disk drives, keyboards, modems, network adapters, printers and displays. Each computer 102 may also include a  
5 disk drive 210 of any suitable disk drive type (equivalently, disk drive 210 may be any non-volatile mass storage system such as "flash" memory).

Within computer network 100, one or more computer systems 102 act as hosts systems for a clearinghouse. The clearinghouse provides a registration or membership option. Consumers, who wish to use the clearinghouse use the  
10 registration option to join, register or otherwise affiliate themselves with the clearinghouse. As part of this process, the clearinghouse provides each new member with a personal agent. The personal agent is a program, application or applet that executes on the users' computers. The personal agent is preferably downloaded as part of the registration process. Other delivery options may also be  
15 used, including physical delivery of the personal agent software using mail or other method.

The personal agent and clearinghouse work together to provide a portal or proxy for the members of the clearinghouse. Each member accesses the Internet and World Wide Web using their browser software. The HTTP communications from  
20 the member's browsers pass through their personal agents and are proxied by the clearinghouse. The personal agents monitor the HTTP communications. This allows the personal agents to make inferences about their users.

The inferences made by the personal agents relate to the user's web browsing habits and purchasing preferences. In some cases, these preferences are  
25 explicit, as in the case where a user has previously purchased the same or a similar product. In other cases, the preferences may be implicit and the user may not even be aware of them.

The use of a personal agent to monitor and analyze web-browsing habits is more completely described in a co-pending US Patent Application Serial Number  
30 09/333,810 entitled "Intelligently Augmentable Web Proxy Server with Per-User Customization Capability" filed June 15, 1999. That disclosure is incorporated in this document by reference. A representative architecture for the clearinghouse proxy server is disclosed in the same patent application.

The personal agent is preferably configured to provide an interface (typically web-based) that allows the users to explicitly specify their purchasing preferences. This interface provides users with the important ability to review and override the inferences gathered during personal agent operation.

5       The clearinghouse includes a database describing vendors, manufacturers, products and services. This database information in the database includes opinions, reviews, test-results, ratings and other assessments. This clearinghouse is preferably configured to provide a number of interfaces for database information input. One of these interfaces is provided for selected third-party consumer  
10      organizations (such as consumer organizations). Many of these organizations are accustomed to gathering and cataloging consumer organization. For this reason, it is advantageous to provide such organizations with an interface that allows them to directly input their information into the clearinghouse database.

15      Consumer information can also be assimilated from a number of other sources. Consumer discussion forums (such as USENET forums) typically include a large number of reviews and opinions. This represents another source of relevant information for the clearinghouse database. This information may be manually reviewed and input. Preferably, however, the clearinghouse is configured to provide filtering software that extracts and inputs relevant information automatically.

20      Product and service availabilities are obtained from the various vendors and manufacturers. This information may be manually reviewed and input. Preferably, however, the clearinghouse is configured to provide filtering software that extracts and inputs relevant information automatically.

25      The clearinghouse also obtains product attributes (i.e., specific product features and descriptive information) from the various vendors and manufacturers. The clearinghouse uses the attributes to group products and services with like products and services. This grouping allows the clearinghouse to present selections of similar goods and services to users. The use of attributes to group products and services allows these groupings to extend across multiple vendors even where the  
30      vendors use different product numbering schemes (as is generally the case).

The clearinghouse uses the information in its database in combination with the information gathered by the personal agents to provide a user-centric shopping

- forum. The shopping forum can be configured to provide true online shopping. Alternatively, the shopping forum can be used as an interface to vendor websites. In either case, the clearinghouse compares the information supplied by the user agent to the information included in the clearinghouse database. The clearinghouse uses
- 5 the results of this comparison to customize the shopping forum for each user. In some cases, this means that the clearinghouse eliminates products, services, vendors and manufactures that conflict with the user's preferences. In other cases, the clearinghouse highlights or otherwise emphasizes products, services, vendors and manufactures that concur with the user's preferences.
- 10 Other embodiments will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. It is intended that the specification and examples be considered as exemplary only, with a true scope of the invention being indicated by the following claims and equivalents.

**WHAT IS CLAIMED IS:**

1. A method of providing for on-line transactions comprising:
  - (a) the determining and maintaining of a set of cross-vendor buying concerns of a user, by a service on behalf of the user
  - 5 (b) the continual collection of a set of product and service descriptions from vendors by the service
  - (c) the continual collection of a set of opinions from third-party organizations by the service
  - (d) a specification by the user of a set of attributes for a particular purchase
  - 10 (e) the presentation to the user of a selection of potential purchases from among the product and service descriptions collected from vendors, which match the attributes specified by the user for that particular purchase, and which presentation also includes consideration of the maintained set of cross-vendor concerns and also the collected third-party opinions
- 15  
2. The method as recited in claim 1, wherein the set of cross-vendor buying concerns in 1(a) includes a plurality of issues such as price and features, quality as assessed by third-party organizations, production characteristics such as location, method, and environmental side-effects of manufacture, customer satisfaction as assessed by third-party organizations, vendor corporate practices such as hiring practices, labor practices, environmental practices, political involvements, and other elements of corporate identity and personality.
- 20  
25 3. The method as recited in claim 1, wherein the set of opinions in 1(c) comprises ratings, test results, evaluations, reviews, critiques.
4. The method as recited in claim 1, wherein the third-party organizations in 1(c) comprise a plurality of entities such as independent laboratories, critics and reviewers, government safety agencies, consumer reporting organizations, news organizations, consumer discussion forums, industry associations, religious organizations, labor unions, demographic organizations, other political organizations.

5. The method as recited in claim 1, wherein the consideration in 1(e) comprises the deliberate omission of items inconsistent with the maintained set of cross-vendor concerns as based on the collected third-party opinions, and/or the explicit indication to the user of such inconsistency, and/or the presentation of 5 pertinent pieces of information, and/or the provision of references to pertinent pieces of information.

6. The method as recited in claim 1, wherein the service maintains an internet server.

7. The method as recited in claim 1, wherein the set of cross-vendor 10 concerns in 1(a) are determined both by explicit input from the user, and implicitly being inferred using software programs and based on the user's online behavior.

8. The method recited in claim 7, wherein the software programs analyze and correlate particular attributes of products, thereby not relying on the existence of a single underlying cataloging or product-numbering system, and thereby allowing 15 the method to scale across multiple vendor sites simultaneously-

9. The method as recited in claim 1, wherein the collection of product and service descriptions is accomplished via the internet.

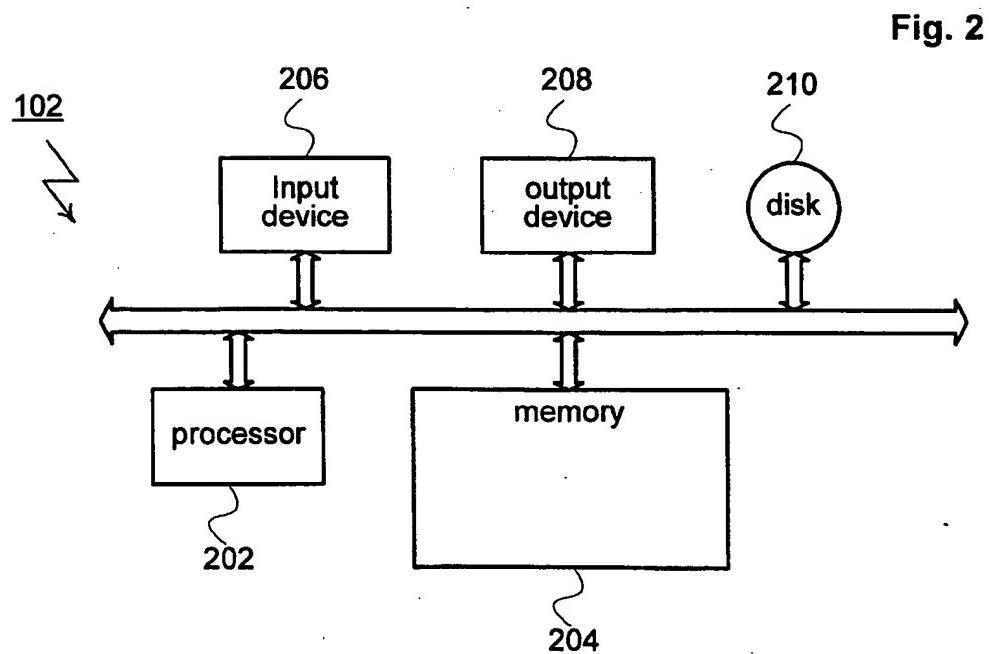
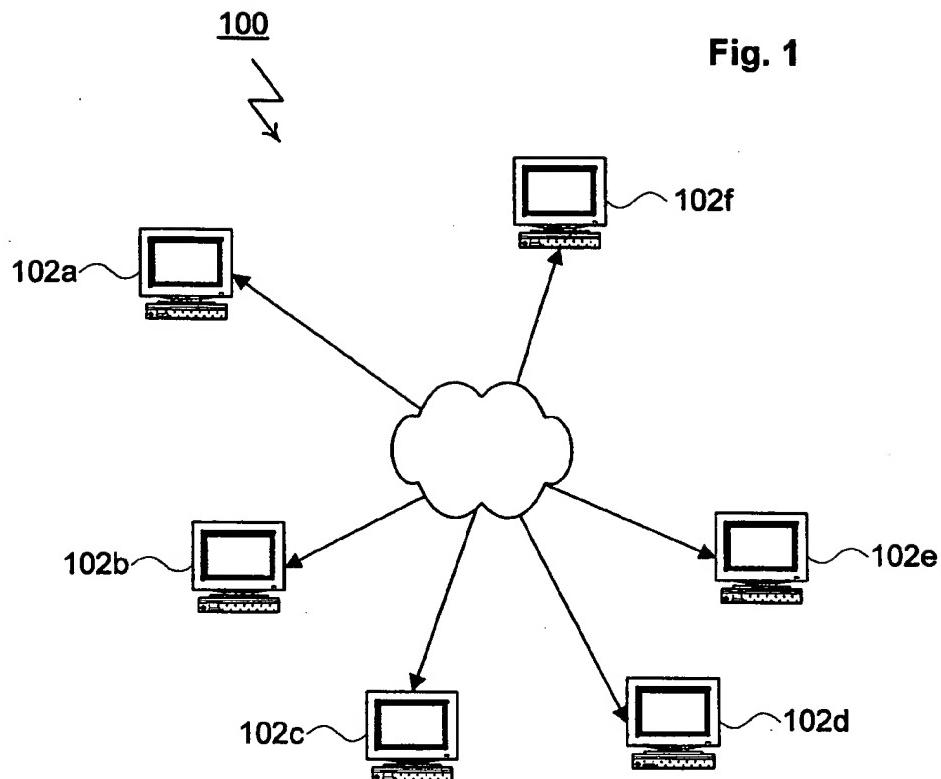
10. The method as recited in claim 1, wherein the collection of third-party opinions is accomplished via the internet.

20 11. The method as recited in claim 1, wherein third-party organizations in 1(c) are supplied with software programs supporting a standardized and convenient means for recording and submitting opinions.

25 12. The method as recited in claim 1, wherein opinions of third-party organizations in 1(c) are inferred using software programs, based on public information which is supplied by such organizations but not explicitly intended for submission to the service.

13. A method of providing for on-line transactions comprising:
  - (a) a user expressing a set of criteria for entering into the transaction;
  - (b) the set of criteria being made available to third parties who may wish to enter into the transaction;
- 5 (c) the user being notified of matches between the set of criteria and the third parties.
14. The method as recited by claim 13 wherein the set of criteria is made available by broadcast on a network.
15. The method as recited by claim 14 wherein the network is the internet.
- 10 16. The method as recited by claim 13 wherein the set of criteria is made available by placing the criteria on a server.
17. The method as recited by claim 13 wherein the criteria includes pricing information.
18. The method as recited by claim 17 wherein the criteria includes country of manufacture and/or corporate practices.
- 15 19. The method as recited by claim 1 wherein matches are determined based on information from a plurality of sources.
20. The method as recited by claim 19 wherein the plurality of sources are selected from one or more of the manufacturer of a product, the distributor of a product, independent testing laboratories, product reviewers, government safety agencies, consumer reporting organizations, news organizations, consumer discussion forums, religious organizations, labor unions, demographic organizations and political organizations.

1/1



## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US00/04905

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :G06F 17/60  
 US CL :705/26, 27

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/26, 27

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Microsoft Press, Microsoft Press Computer Dictionary 3rd edition.  
 Considine, Van Nostrand's Scientific Encyclopedia 6th edition.

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Extra Sheet.

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y,E	US 6,041,308 A (WALKER ET AL.) 21 MARCH 2000; the summary, col.6 lines 26-30, page 2, col.4 lines 60-64, col.5 lines 10-14, and lines 41-49.	1-20
Y,E	US 6,055,513 A (KATZ ET AL.) 25 APRIL 2000, the summary, col.1 lines 53-67, col.7 lines 37-42, col.9 line 65 to col.10 line 7.	1-20
Y,P	US 5,901,228 A (CRAWFORD) 04 MAY 1999, the summary, Figs. 2-7, col.5 lines 57-65.	1-20
Y,E	US 6,064,980 A (JACOBI ET AL.) 16 MAY 2000, Fig.1, col.4 lines 23-25 and 52-63, col.9 lines 25-31	1-20
A,P	US 6,026,374 A (CHESS) 15 FEBRUARY 2000, the entire patent.	1-20

Further documents are listed in the continuation of Box C.  See patent family annex.

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## INTERNATIONAL SEARCH REPORT

International application No. PCT/US00/04905
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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A,P	US 5,991,740 A (MESSER) 23 NOVEMBER 1999, the entire patent.	1-20
A	US 5,815,657 A (WILLIAMS ET AL.) 29 SEPTEMBER 1998, the entire patent.	1-20
A,P	US 5,963,924 A (WILLIAMS ET AL.) 05 OCTOBER 1999, the entire patent.	1-20
A,P	US 6,016,484 A (WILLIAMS ET AL.) 18 JANUARY 2000, the entire patent.	1-20

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US00/04905

B. FIELDS SEARCHED

Electronic data bases consulted (Name of data base and where practicable terms used):

WEST1.2/DERWENT, DIALOGUE CLASSIC, NPL (CORPORATE RESOURCE NET)

search terms: online or internet or www or web, clearing house, regist\$, produc\$1 or servic\$, assist\$3 or aid\$3 or help\$3, select\$3, web brower, vendor, client\$1 or buyer\$1, review\$3 or opinion\$1 or evalua\$3, cost\$1 or pric\$3, test result\$1, specification\$1, transact\$3, match\$3 with attribut\$3, purchas\$3, user\$1, submit\$3, notif\$4, information, criteria, server\$1, broadcast\$3, manufactur\$3

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